

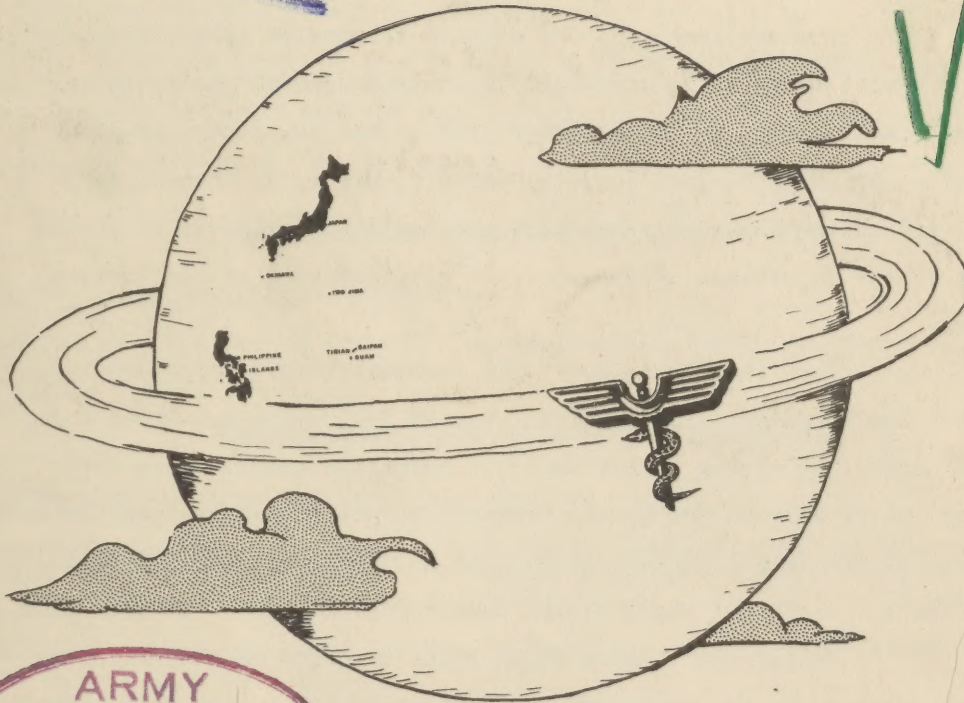
RESTRICTED

DOCUMENT SECTION

MED SEC GHQ FEC

INDEXED
7-12
5

VOL V NO 3
1 MAR 1950



ARMY
MEDICAL
MAR 27 1950
LIBRARY

JUN 12 1950

A FAR EAST PERIODICAL OF MEDICAL DEPARTMENT INFORMATION

SURGEON'S CIRCULAR LETTER

RESTRICTED

DENTAL CORPS OBSERVES ANNIVERSARY

The Act of 3 March 1911 creating a Corps of 60 dental surgeons and acting dental surgeons with rank, pay, and allowances of first lieutenant gave commissioned status to dentists for the first time in the history of the Army. Events prior to that time and through the succeeding years have seen dental service in the Army develop from the ministrations of a single individual to a Corps of 753 officers authorized by the Officer Personnel Act of 1947.

The earliest recorded attempt to provide dental treatment for troops seems to be contained in an announcement published at Jacksonville, Florida, on 30 September 1898 by the Commander, Seventh Army Corps, which proclaimed hospital steward, Dr. J. W. Horner, Corps dentist and stated that service would henceforth be available to troops without charge at offices provided by the Quartermaster in the Hubbard Building.

The first legal provision for dental service, however, came with the Congressional Act of 2 February 1901 which empowered the Surgeon General to employ thirty contract dental surgeons. This group provided dental service for troops overseas as well as in the continental limits of the United States, largely on an itinerant basis until their number was increased and their status changed by the Act of 3 March 1911.

During the ensuing years other benefits and improvements have contributed to the growth and development of the Dental Corps from this modest beginning to the stature which it enjoys today. The present scope of activities of the Army including internship, residency, professional education, and career-management programs offers opportunities for advancement, travel, and security hardly envisioned by the small group which comprised membership of the Dental Corps when it was created 39 years ago.

GENERAL HEADQUARTERS
FAR EAST COMMAND
MEDICAL SECTION

SURGEON'S CIRCULAR LETTER

APO 500

NUMBER. 3

1 March 1950

PART IADMINISTRATIVE

<u>SUBJECT</u>	<u>SECTION</u>	<u>PAGE</u>
Organization of the Medical Section.	I	1
Deputy Surgeon General and Party Visit Far East Command.	II	1
Outpatient Index	III	1
Army Acts to Meet Summer Medical Shortage.	IV	2
Warrant Officers' Medical Course	V	3
Army Veterinarians Preparing New Inspection Guides	VI	3
Management Program Underway at Army General Hospitals.	VII	4
Consolidated Medical Journal	VIII	5
Refresher Course for Reserve Nurses in Army Hospitals in the Far East Command.	IX	5
Army's Health in 1949 Better Than Ever Before.	X	8
Disposition of Register of Dental Patients (Form 8-116).	XI	8
Short Tours of Active Duty for Medical Department Officers	XII	9
Recent Department of the Army and FEC Publications	XIII	9
Index.	Inside Back Cover	

I. Organization of the Medical Section

Departure from the Medical Section: Colonel Robert E. Blount, MC, Medical Consultant, Far East Command, has completed his overseas tour of duty and has returned to the ZI for assignment to Walter Reed General Hospital, Washington, D.C.

II. Deputy Surgeon General and Party Visit Far East Command

The Deputy Surgeon General, Maj. Gen. George E. Armstrong, accompanied by Colonel Paul I. Robinson, Chief of the Personnel Division, and Colonel Lacy Tynes, Chief of Plans and Operations, Office of the Surgeon General, visited the medical installations in the Far East Command.

In addition to his tour of Japan, General Armstrong and his party visited Guam, the Philippines, Ryukyu Island and Saipan.

III. Outpatient Index

Information available to this office indicates that some dispensaries and outpatient clinics do not have a copy of AR 40-1025, Records and Reports of Sick and Wounded. This regulation was originally published in December 1944 and has five changes. This regulation should be secured through the AG Publications Office that serves the dispensary. The outpatient index will be maintained as follows until changed by a new Army Regulation:

Form used.--The outpatient index will be kept on WD AGO Form 8-25 (old WD MD Form 52a) or any other appropriate form. Only one index card will be prepared for each outpatient regardless of the number of times the outpatient may appear at the given medical installation for treatment or observation. Additional space may be secured by attaching additional cards to the initial card. The form will be labeled at the top "Outpatient."

Manner of recording data.--Every treatment or observation will be recorded on the index card separately, noting in each case the date, the diagnosis (or in lieu of the latter a brief description of

the symptoms, physical signs, etc.), the treatment prescribed, and the line of duty. This applies even if the condition for which the outpatient is treated or observed is simultaneously carded for record only.

Method of keeping the outpatient index:

The index cards of the outpatients treated during any current report period will be kept in a separate alphabetical file, to be known as the outpatient index--current file, until the required outpatient data have been compiled for the report sheet of sick and wounded. Thereafter, the cards will be placed in a general alphabetical file to be known as the outpatient index--general file.

The outpatient index--general file will be maintained on a yearly basis, cut off at the end of the calendar year and a new file established on 1 January of each year. Effective as of 1 January 1950, this file will consist of the following groups of indexes, arranged alphabetically within each group:

Army military personnel	Army and Air Force civilian employees
Air Force military personnel	Dependents of military personnel
All others	

Should an outpatient subsequently apply for further outpatient treatment, any outpatient index card pertaining to the individual, contained in either the current or preceding year's general file, will be withdrawn and placed in the outpatient index--current file. Upon completion of treatment and rendering of the Report of Sick and Wounded (WD AGO Form 8-23), such outpatient indexes will be placed in the current year's general file.

The outpatient index--general file for the year 1950, and for subsequent years, after being cut off will be held for 1 additional year and then retired as follows:

Records pertaining to Army military personnel to The Adjutant General, Washington 25, D.C., Attention: Personnel Information Branch.
 Records pertaining to Air Force military personnel to the Chief of Staff, United States Air Force, Washington 25, D.C., Attention: Personnel Records Service.
 Records pertaining to civilian employees, dependents of military personnel, and all others, to the Chief, Civilian Personnel Records Branch, Building 104, Records Administration Center, AG 4300 Goodfellow Boulevard, St. Louis 20, Missouri.

In order to insure that those persons who are classified as pay patients under the provisions of GHQ-FEC Circular 16, 1949, pay the proper charges for their medical treatment, it is recommended that their index card be conspicuously marked PAY PATIENT. Charges will be made and reports submitted in accordance with the provisions of GHQ-FEC Circular 16, 1949.

IV. Army Acts to Meet Summer Medical Shortage



An anticipated critical shortage of physicians this summer in overseas commands was revealed this week when Major General R. W. Bliss, Army Surgeon General, announced emergency plans for alleviating the condition.

The commanders of Army General Hospitals, General Bliss stated, are being notified that 100 medical officers are to be selected from first and second year residents in teaching hospitals to meet the temporary medical needs in the European and Far Eastern Commands during the summer months. He emphasized that the officers selected would serve only temporarily in their overseas assignments and would return to their regular residency assignments during August. Extension of their resident periods will cover time lost from formal training, he said.

The Army Surgeon General explained this temporary shortage is caused by the loss during the summer months of the last large group of doctors who are completing their service obligation to the Government in return for wartime exemption and financial aid to finish their medical educations. Gen. Bliss paid tribute to the physicians leaving the service and said their contributions to the Army medical service had been invaluable.

Gen. Bliss stated that he expected the overseas quotas would be filled by sufficient numbers of applicants who will seek to take the advantage of the opportunity for the invaluable medical experience to be gained overseas as well as welcome a three or four month respite from the rigorous training

program in which they are now engaged.

Gen. Bliss asked his hospital commanders to give particular consideration to the family status of officers selected and asked that the medical officers be given, insofar as possible, a choice of temporary service in Europe or the Far East.

The critical shortage will end in August as physicians completing current training programs become available during that month for duty assignments. He expects the current high standards of over-sea medical care will be maintained by this measure.

The Army teaching hospitals whose students will be eligible to apply for temporary overseas assignments are: Walter Reed General Hospital, Washington, D.C.; Brooke General Hospital, San Antonio, Texas; Fitzsimons General Hospital, Denver, Colorado; Letterman General Hospital, San Francisco, California; Madigan General Hospital, Tacoma, Washington; Oliver General Hospital, Augusta, Georgia; Valley Forge General Hospital, Phoenixville, Pennsylvania; Tripler General Hospital, Honolulu, Hawaii; and Gorgas Hospital, Panama Canal Zone.

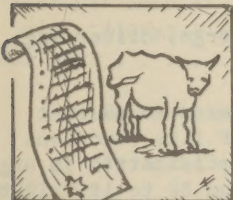
V. Warrant Officers' Medical Course

The Army Medical Department has announced that Class No. 2 of Course 8-17, Medical Department Warrant Officers' Preparatory and NCO Refresher Course started 6 February, for 12 weeks duration, ending 28 April 1950. The class is being conducted at the Medical Field Service School, Brooke Army Medical Center, Ft. Sam Houston, Texas.

Warrant officers of the Medical Department eligible for this course were required to have a minimum of six months experience in duties involving activities peculiar to the Medical Department; enlisted personnel eligible were those in Grade 1 with a minimum of one year service with the Medical Department.

For interested personnel, additional information concerning the course may be found on page 199, DA Pamphlet No. 20-21, Army School Catalog, dated July 1949.

VI. Army Veterinarians Preparing New Inspection Guides - DA SGO, Technical Information Office



The preparation of the first group in a series of "Standard Inspection Guides" by the Army Veterinary Corps in cooperation with the Quartermaster Corps, to assure the purchase of only the best meats, poultry, eggs, seafood and dairy products has been announced by Brigadier General J. A. McCallam, Chief of the Veterinary Division of the Army Surgeon General's Office.

The Army Veterinary Corps, with the assistance of Air Force veterinary officers, is responsible for maintaining high standards of purity and quality in all foods of animal origin purchased by the Quartermaster General for all of the armed forces.

While Veterinary Corps standards have always been high, inspection of foods, of animal origin, which constitutes the major part of the work of the Corps, has been based in the past on the experience and judgment of the individual officer conducting the investigation. Through the use of the standard guides, it is expected that the inspection of each type of food will achieve greater uniformity of quality and palatability. They will also provide a standard procedure to be followed by all inspectors, regardless of location, so that inspections will be the same in all parts of the United States. Since producers and processors who supply food to the armed services also sell to civilian distributors, the work of the Veterinary Corps in this respect will also be beneficial to everyone who eats food of animal origin.

The SIG's are being prepared jointly by the Inspection Division of the New York Quartermaster Procurement Agency and the Veterinary Corps, with the actual work necessary for the field trials and preparation of the drafts being performed by selected veterinary personnel at the Office of the Depot Veterinarian, Chicago Quartermaster Depot.

Over 100 individual SIG's will be developed, each covering one specific animal-origin food. The first nine, dealing with bologna, sausage, frankfurters, port sausage, liver sausage, smoked hams, cooked salami, dry salami, luncheon meat, and pork loins, have been sent by the Veterinary Division,

Office of the Army Surgeon General, to a number of veterinary officers, all specialists in the field of food inspection in various parts of the United States. When the drafts are returned, the comments of these inspectors will be reviewed and evaluated and used to revise the SIP's in final form. They will then be published and distributed to all food-inspecting officers of the Veterinary Corps.

VII. Management Program Underway at Army General Hospitals - DA SGO, Technical Information Office



The inauguration of a new program to apply scientific management principles to Army general hospitals, has been announced by Maj. Gen. R. W. Bliss, Surgeon General of the Army, based on the findings of a six-month test at Valley Forge General Hospital, Phoenixville, Pennsylvania.

This will be the first phase of a comprehensive overall program which will affect all medical installations caring for patients, Gen. Bliss emphasized. When the general hospital phase is completed, a similar management program will be introduced for station hospitals in the United States and, finally, for all others.

Based on experience at Valley Forge, considerable economies in both money and manpower are expected when the initial general hospital phase is completed. Compared with the average staffing ratio for the past year, Gen. Bliss estimates a reduction of 25 overhead personnel will be possible for each 100 occupied beds with no decrease in the present high level of patient care. The introduction of new organizations and administrative procedures to all general hospitals in the United States, is expected to be completed by 1951.

The general hospital and subsequent programs will involve many procedures which individually will result in minor savings; collectively, however, it can be expected that these savings will be an impressive contribution to economy efforts of the Defense Department and the Department of the Army.

The extensive use of scientific management principles in hospital administration was first conceived by General Bliss during the war when he was chief of the plans and operations division of the Surgeon General's Office. The background for the present program was established a year ago with the organization of a management research group in General Bliss' office. Groundwork for the general hospital phase of the program was laid with the designation of Valley Forge General Hospital as a "testing laboratory" for new hospital administrative procedures.

Gen. Bliss has experimented freely with new management methods at Valley Forge, discarding many, adopting others, and holding others for further study.

Although the tests are still continuing, enough progress has already been made to warrant introducing many of the new principles to other Army hospitals. The consolidation of like functions has permitted not only increased efficiency and economy, but also a considerable simplification in organizational structure. Administrative and professional divisions have been reduced from 32 to 16. In the case of hospital supply, for example, separate medical, quartermaster, engineer, and similar supply functions were consolidated into a new centralized agency that operates more efficiently with less personnel and warehouse space.

One important project, still under study at Valley Forge, involves the use of additional business machines to provide administrative shortcuts and economies. In the test installation, machines are being used to collect and compile medical and personnel statistics, prepare payrolls, maintain supply accounting records and requisition supplies.

Early findings indicate that these statistical and accounting functions can be performed by these machines more rapidly, accurately, and economically than by the old manual method. A valuable by-product of the machine operation is the production of formerly unavailable detailed data on hospitalization costs.

At Valley Forge, ward supply procedures have been especially simplified through use of the machines. In the past, the method of obtaining supplies was comparable to the effort involved in ordering items from a mail order catalogue. The new system, as far as ward personnel is concerned, simply involves making four marks on a card with an electrographic pencil. Machines do the rest of the work.

VIII. Consolidated Medical Journal

Reserve officers commissioned in the Medical, Dental, Veterinary, or Medical Allied Science or Sanitary Engineering Section of the Medical Service Corps may receive the newly established Armed Forces Medical Journal, (see page 1, Surgeon's Circular Letter, 1 January 1950, for additional information), provided they make request in writing to Army Surgeon General, Main Navy Building, Washington 25, D.C. Those who previously requested and have been receiving the "Bulletin of the U. S. Army Medical Department" will automatically receive the joint publication, beginning with the January issue.

IX. Refresher Course for Reserve Nurses in Army Hospitals in the Far East Command



In the Far East Command there are many eligible Reserve nurses who are currently applying for short periods of active duty to earn annual credits toward retirement. Upon request and with proper authority they may be ordered to active duty for a period of 14 days with pay. Only 14 credits may be earned for this period and a maximum of two hours is necessary to earn one qualifying credit. In view of the limited time allotted and in order that the officer may utilize, to the fullest extent, training in her Military Occupation Specialty in nursing, the following program is suggested as a guide for the period indicated:

NO. OF HOURS

I. NURSE, ADMINISTRATIVE - 3430

a. (1) Report to office of PCN	
(2) Meet the CO of the medical installation	
(3) General orientation to include a tour of all hospital departments	
(4) Army hospital rules and regulations	4
b. Conference with PCN and Personnel officer regarding policies and DA Circulars as they pertain to ANC; requisitioning of personnel rosters, efficiency reports, and hospital records.	2
c. Ward administration, including application of medical and surgical technics.	10
d. Problems in nursing administration and solution.	2
e. Planning of professional training programs, conferences, and educational seminars for ANC.	2
f. Requisitioning of supplies, property responsibilities and food service to patients.	2
g. Assignment of personnel, performance, morale, recreation and housing of women officers	2
h. Conference with PCN and submission of paper, "The Role of a Nurse Administrator in the Army Hospital".	4

TOTAL: 28 hours - 14 Credits

II. NURSE, GENERAL DUTY - 3449

a. (1) Report to office of PCN	
(2) Meet the CO of the hospital	
(3) General orientation to include a tour of all hospital departments	
(4) Army hospital rules and regulations	4
b. Ward administration, including assignment of personnel, professional training programs, efficiency reports, hospital records, requisitioning of supplies, and food service to patients including special diets.	4
c. Educational seminars and conferences	2

(ED's NOTE: Reference is made to Ltr ATNG-18 353.01/58(11 Jan 50) Subject: Unit Training Program, Army Nurse Corps Reserve, (from Office, Chief, Army Field Forces, Ft. Monroe, Virginia).

d. Observation and application of nursing technics on wards including surgical, medical and isolation section.	14
e. Written case study of medical or surgical patient observed during training period	4

TOTAL: 28 hours - 14 credits

III. NURSE, NEUROPSYCHIATRIC - 3437

a. (1) Report of office of PCN (2) Meet the CO of the hospital (3) General orientation to include a tour of all hospital departments (4) Army hospital rules and regulations	4
b. Ward administration in neuropsychiatric section including assignment of personnel, hours of duty, professional training, efficiency reports, hospital records, special treatments of patients, requisitioning of supplies, food service to patients	4
c. Educational seminars and professional conferences.	2
d. Observation and application of nursing technics in psychiatric wards and clinics.	14
e. Case study of "Nursing Care of Patients with Certain Types of Mental Diseases".	4

TOTAL: 28 hours - 14 credits

IV. NURSE, OPERATING ROOM - 3443

a. (1) Report to office of PCN (2) Meet the CO of the hospital (3) General orientation to include a tour of all hospital departments (4) Army hospital rules and regulations	4
b. Application of operating room administration and technic	14
c. Pre- and post-operative care of surgical patients.	2
d. Operation of Central Supply Service.	2
e. Educational seminars and training of assigned personnel.	2
f. Written case study of a patient who has had a surgical operation performed	4

TOTAL: 28 hours - 14 credits

V. NURSE, ANESTHETIST - 3445

a. (1) Report to office of PCN (2) Meet the CO of the hospital (3) General orientation to include a tour of all hospital departments (4) Army hospital rules and regulations	4
b. Review of all types of anesthetics to be administered and check on equipment, requisitioning of supplies.	2
c. Application of technics in administration of anesthesia.	14
d. Pre- and post-operative care of patient who has had an anesthetic.	2
e. Administration of oxygen and operation of equipment.	2
f. Problems encountered in administration of anesthetics including resuscitation and emergency measures used (discussion and conference.	2

g. Paper to be completed on "The Nurse Anesthetist's Responsibility during Administration of Anesthetics"	2
---	---

TOTAL: 28 hours - 14 credits

VI. NURSE, COMMUNICABLE DISEASE - 3441

a. (1) Report to office of PCN	
(2) Meet the CO of the hospital	
(3) General orientation to include a tour of all hospital departments	
(4) Army hospital rules and regulations	4
b. Review of isolation technic	2
c. Food service to patients including special diets.	2
d. Hospital records for admission and discharge of patients.	2
e. Preventive measures for control of communicable disease	2
f. Immunizations, technic of administration.	2
g. The treatment of poliomyelitis including the Kenny packs and use of respirator. . .	2
h. Ward administration and application of nursing technics	12

TOTAL: 28 hours - 14 credits

VII. NURSE, PEDIATRIC - 3442

a. (1) Report to office of PCN	
(2) Meet the CO of the hospital	
(3) General orientation to include a tour of all hospital departments	
(4) Army hospital rules and regulations	4
b. Records of patients, special diets and formulas, requisitioning of supplies	2
c. Professional training and progress of personnel assigned.	2
d. Supervision and application of nursing technics	14
e. Care of newborn and premature babies.	2
f. Ward administration including recreation programs, isolation technic, and applications in nursing.	4

TOTAL: 28 hours - 14 credits

VIII. NURSE, OBSTETRICAL - 3446

a. (1) Report to office of PCN	
(2) Meet the CO of the hospital	
(3) General orientation to include a tour of all hospital departments	
(4) Army hospital rules and regulations	4
b. Review of obstetrical nursing including the "Rooming-in Plan"	2
c. Aseptic technic and observation of delivery room.	4
d. Food service including special diets and preparation of formulas.	2
e. Supervision and application of obstetrical nursing.	12
f. Ward administration including work assignment sheets, time schedules, and professional training program for personnel.	2

g. Preparation of case study of obstetrical cases in hospital.

2

TOTAL: 28 hours - 14 credits

X. Army's Health in 1949 Better Than Even Before - DA SGO, Technical Information Office



"The Army's health was better in 1949 than it has even been," Maj. Gen. R. W. Bliss, Army Surgeon General stated recently. "The U. S. Army today is not only the healthiest army in the world, but the healthiest in all history," he declared.

Preliminary figures released by the Surgeon General show that the rate of admissions for 1949 was 128 per 100,000 strength per average day. "Admissions" in Army medical reporting includes not only hospital patients, but also all persons relieved from duty because of illness or injury beyond the actual day of onset. The 1949 report shows an improvement in Army health for the fourth consecutive year since the end of hostilities and compares with an average wartime rate excluding battle casualties, of 202 admissions per 100,000 per day. Since then there has been a steady decline, the average daily rate being 178 in 1946, 174 in 1947, and 132 in 1948.

The new health record is attributed largely to a consistent application of the Army's traditional policy of preventive medicine, an unprecedented low incidence of respiratory diseases, and other factors. "This splendid achievement is even more remarkable when it is realized that in the past year a larger proportion of the Army was stationed in oversea areas than in prewar years. Diseases are much more prevalent in some of these areas than in the United States," Gen. Bliss stated.

The Army report includes rates for the Air Force for the first half of 1949, as well as for the Army for the entire year. The Air Force set up its own medical service last July, and began its own system of health reporting at that time.

The 1948-49 seasonal peak incidence rate for respiratory diseases in the United States was 43% of the normal seasonal peak, the Army's chief medical officer said, and the venereal disease incidence rate was about 50% lower in 1949 than the postwar peak of mid-1946. Injuries and other categories also showed improvement.

There was also a consistent decline in the death rate, particularly in deaths from disease. The 1949 figures for total deaths were 200 per 100,000 strength per year, against 220 for 1948 and 230 for both 1946 and 1947. There were 50 deaths from disease per 100,000 per year in 1949, 60 in 1948, 70 in 1947, and 80 in 1946.

Rates released by the U. S. Public Health Service for the total civilian population in all age groups showed 989 and 1008 deaths per 100,000 in the U. S. during 1947 and 1948, respectively.

"The improved health record of the Army is a matter of pride to every member of the Medical Department. With Army medicine now in its 175th year, I am confident that this record will be maintained in 1950," the Surgeon General said.

XI. Disposition of Register of Dental Patients (Form 8-116)

Attention of all dental officers is invited to Change 5, AR 40-1010, DA, 5 January 1950, which prescribes a new maintenance and disposition procedure for dental register cards on and after 1 January 1950.

Briefly, the new system requires the permanent or closed case file of register cards to be arranged alphabetically within the following groups:

1. Army military personnel
2. Air Force military personnel
3. Civilian employees of DA and DAF
4. Dependents of military personnel
5. Others

Such files will be cut off at the end of each year and retained for one additional year following which disposition will be made by shipment, according to category, to one of three addresses cited

in the new regulation.

Military Occupational Specialty - Dental

The recent addition of Oral Pathologist - MOS 3177 - increases the list of military occupational specialties which may be achieved by Dental Corps officers to a total of eight. TM 12-406 currently lists the following codes and titles pertaining to dental activities:

<u>MOS</u>	<u>TITLE</u>	<u>MOS</u>	<u>TITLE</u>
3170	Dental Officer	3174	Periodontist
3171	Oral Surgeon, Dental	3175	Prosthodontist
3172	Exodontist	3177	Oral Pathologist
3173	Orthodontist	3178	Dental Officer, Staff

Dental Intern Program Continued

SR 605-60-44, DA, 11 January 1950 announces continuation of the dental intern training program in Army general hospitals for a period of 3 years from 1 July 1950 to 30 June 1953 inclusive.

Approximately 40 internships will be offered annually to selected graduates of dental schools acceptable to the Department of the Army. The professional program is of a rotating type and designed to conform to requirements of the Council on Dental Education of the American Dental Association.

No period of obligatory service is incurred by participants in this program but they are encouraged to make application for the Regular Army or extended active duty as a reserve officer upon completion of the period of training.

Participants in the Army senior dental student program authorized by SR 605-60-41 are eligible for dental intern training upon graduation. Having agreed, however, to serve on extended active duty for two years, such period must be in addition to time spent on an Army dental intern status if selected for such training.

Dental Residency Program

The first Army residency training program in the dental field will be conducted at Walter Reed General Hospital according to a recent announcement. A single dental officer has been selected to begin one year's residency training in prosthetics during 1950.

XII. Short Tours of Active Duty for Medical Department Officers

In order to alleviate some of the restrictions imposed upon Army Commanding Generals in the ZI when procuring certain Medical Department officers for tours of less than 30 days, changes to SR 140-210-10 read as follows: "In the event all authorized field grade officer spaces of a command are filled, and certain company grade spaces are unfilled, the army commander within the zone of interior may recall field grade medical and dental officers in place of company grade officers within the field grade quotas established for the purpose by Headquarters, Department of the Army." (Ref: Change 3, above SR, 16 Dec 49.)

XIII. Recent Department of the Army and FEC Publications



AR 35-6680, 23 Dec 49, C-4: Finance Dept: Transfers of Property Accountability and Responsibility, Par 6 (e)

AR 40-1025, 3 Jan 50, C-5: MD: Records and Reports of Sick and Wounded

AR 40-1010, 5 Jan 50, C-5: MD: Dental Reports, Returns and Records. Supersedes C-4, 31 Dec 48

AR 35-1630, 11 Jan 50: Finance and Fiscal: Pay & Allowances of Contract Surgeons, Supersedes AR 35-1920, 6 Jul 44, Par 32 and figures 1 and 2, TM 14-501, 11 Jun 46

AR 600-443, 12 Jan 50: Personnel: Separation of Homosexuals

AR 350-1010, 24 Jan 50, C-2: Professional Education and Training for MD Officers

DA CIR 123, 15 Dec 49: Sec II Historical Manuscripts

DA CIR 1, 3 Jan 50: Sec V Communications with Veterans Administration

DA CIR 2, 16 Jan 50: Sec VI Armed Services Catalog of Medical Materiel

SR 140-220-1, 9 Jun 49: ORC: Short Tours of Active Duty Training. Par 6, Physical Examination; Par 8, Physically Disqualified Reservists; Par 9, Injury and Disease; Par 10, Hospitalization; Par 12 c, Disposition of Physical Examination Reports

SR 700-405-10, 15 Dec 49: Supplies and Equipment - General. Primary Batteries. Par 5, Batteries for Hearing Aids

SR 900-20-1, 19 Dec 49: Veterans Administration - Organization, Functions and Addresses

SR 605-25-10, 21 Dec 49: Officers: Appointment in Medical, Dental, Veterinary, Medical Service, Army Nurse, and Women's Medical Specialist Corps, RA. Supersedes AR 605-20, 11 Jun 48

SR 40-305-10, 28 Dec 49: Virology in Army Area Medical Laboratories

SR 605-60-43, 4 Jan 50: Officers: Medical Officers Procurement - Professional Training Programs

SR 350-350-40, 6 Jan 50: Army Officer Candidate Courses: WAC, Par 5 e, Physical Examination

SR 605-60-44, 11 Jan 50: Officers: Dental Officer Procurement - Dental Military Intern Program

SR 350-230-600, 24 Jan 50: Tentative Courses for MD Officers and Warrant Officers - Fiscal Year 1951

SR 40-530-10, 27 Jan 50, C-1: Hospitalization in Army Medical Facilities in ZI of Non-military Personnel enroute to or from Overseas

JAAF BUL 34, 29 Nov 49: National Military Establishment Appropriation Act 1950, Medical Department; Medical and Hospital Department

PART II

TECHNICAL

<u>SUBJECT</u>	<u>SECTION</u>	<u>PAGE</u>
Two Simple Liver Function Tests.	XIV	10
Social Problems at Kobe Base Affecting the Medical Department.	XV	11
Perforating Palatal Erosion with Massive Hemorrhage Following Tooth Extraction	XVI	14
The Physiology of Wound Healing and Evisceration	XVII	15

XIV. Two Simple Liver Function Tests



Bilirubinuria

During recent visits by the Medical Consultant, FEC, to various hospitals in this command, it has been noted that tests for bile in the urine in cases of suspected liver disease have not been performed in many instances.

The test that combines the qualities of specificity, sensitivity, and simplicity to the greatest degree is believed to be the Watson-Turner modification of the Harrison test. This test is described in TM 8-227, October 1946, Page 150:

....."Immerse a strip of barium chloride-impregnated* filter paper into the urine sample for a depth of about 3/4 inch and after approximately one minute remove and allow the excess urine to drain off by touching the strip to the top of the container. Lay the strip upon any

* Soft, thick absorbent paper, such as Schleicher & Schuell #470, dipped in a saturated aqueous solution of barium chloride dried and cut into strips approximately 4 inches by 1/2 inch.

absorbent paper, for example, paper towel, newspaper, etc. Now add one or two drops of Fouchet's reagent at the upper zone or line marking the depth to which the strip of paper has been immersed, not to be confused with the spread of moisture due to capillary action above this point. In the presence of bilirubin a green or greenish-blue color will develop. The color is produced by the reaction of ferric chloride with the barium compound resulting from its combination with bilirubin. If a large amount of bilirubin is present a deep green color of wide extent will be seen; if a small amount, a faint green line or band will appear across the strip."

Studies of infectious hepatitis have shown that bile may be present in the urine at the beginning of the illness, before significant increases in serum bilirubin levels have occurred. The finding of bile in the urine in the pre-icteric stage of hepatitis is quite in accord with the history that these patients commonly give of "dark urine for several days before the appearance of jaundice".

Demonstration of bilirubin in the pre-icteric phase of hepatitis is believed to be of tremendous importance in the early diagnosis of this very important illness.

Urobilinogenuria

Most hospital laboratories in this command appear to depend upon the Wallace-Diamond dilution technique as modified from the Ehrlich Aldehyde test for urobilinogen levels. Recent experience indicates that this technique, which is described in the 5th Edition, 1944, of Laboratory Methods of the U. S. Army, is not reliable.

Dr. C. J. Watson, Civilian Consultant in Hepatic Diseases to the Secretary of the Army, recommends the simple qualitative Ehrlich reaction for urobilinogen in the urine as being both simple and reliable. 1/ 2/ This test is particularly useful when applied serially by the same individual. It is recorded simply as a trace when a faint pink color appears on up to 4-plus, which is represented by an intense red-blue color. Watson states that the use of sodium acetate is very important in this reaction. ...3/. "In the first place, it greatly intensifies the color and, in the second place, it largely or completely abolishes any color due to indole or skatole, which also react with the aldehyde."

The qualitative Ehrlich reaction can easily be recorded from day to day and is of considerable value in following the progress of any case of hepatitis. Watson feels that the infectious hepatitis patient should not be allowed to resume activity until the urine Ehrlich reaction has returned to and remained at normal levels for several days. In addition, before the patient becomes ambulatory, the jaundice must have disappeared, appetite and a feeling of vigor returned, and the bromsulphthalein test show no retention. It is not necessary to keep the patient in bed until the thymol turbidity returns to normal levels.

No one or two tests of liver function can be relied upon too strongly. In addition to clinical observations, the use of a battery of liver function tests in following the course of infectious hepatitis is still necessary. The case of infectious hepatitis should be hospitalized if possible in a unit where adequate laboratory followup is available.

1/ Fouchet's reagent is a mixture of 25 gm. trichloroacetic acid, 0.9 gm. ferric chloride and 100 cc. distilled water.

2/ "Liver Function in Hepatitis", by C. J. Watson and F. W. Hoffbauer, ANNALS OF INTERNAL MEDICINE. 26:813 June 1947

3/ "Simple Laboratory Test as an Aid in Recognizing Early Hepatitis" THE BULLETIN, U.S. Army Medical Department. 5:236, 1946

4/ "Studies of Urobilinogen", by C. J. Watson, et al. AM JOURN OF CLINICAL PATHOLOGY. 14: 598, 1944

XV Social Problems at Kobe Base Affecting the Medical Department - Maj. Wm. E. R. Basch, MC, 8th Station Hospital.



The social problems affecting Kobe Base are not unusual ones. Venereal disease and narcotics have been with every Army. The word "social" itself implies society is involved. Our experience has been rather wide in scope and summarized for whatever value it may be.

VENEREAL DISEASE:

Many elements go toward producing a high rate of venereal infections; just as

RESTRICTED

many elements or parts exist in a successful program toward reducing the rate. Factors we have found to be most important are:

1. All officers and enlisted personnel must realize the importance of reducing infections to the absolute minimum and their responsibilities in that duty.
2. There must be coordination of all staff sections and commanders with an honest energetic approach made.
3. Personnel guilty of repeated infections should be disposed of as early as possible under the provisions of AR 615-368.
4. Training programs, demonstrations, pass privileges, advance in curfew hour, athletics, recreation, and recreational facilities; all must be kept in mind to insure a well rounded approach.
5. Surprise physical examinations may be of value to promote a feeling of insecurity in concealment.
6. Close coordination with local civilian medical groups, and governmental departments can be of great value.
7. Mediums of education are radio, movies, pamphlets, posters, and loud speakers.
8. Diagnosis and treatment for those requiring it must be accessible both in location and price.

NARCOTICS:

This problem is considerably different from that of venereal disease. Vice travels with vice, but narcotic traffic seems to present a pattern involving personnel initially not susceptible to some degrading practices.

The Medical Department stands in a position to secure valuable information on this problem. The Provost Marshal often finds good counsel with the Surgeon. Very often valuable leads are given by confessing drug addicts. The Medical Department is in a position to coordinate action being taken eliminating confessed drug addicts under the provisions of AR 615-368. The procedure now being utilized at Kobe Base is as follows:

1. Secure all possible information from the unit commander of a suspected drug addict. This type of patient has usually gone through a rapid decline in ability, discipline, and health.
2. Observe the patient closely denying him access to any source of drugs. Symptoms experienced by true addicts denied the drug may be a factor influencing the wish to make a sworn confession. The patient should be advised from the beginning as to how the statement is to be used. The patient must be advised of his rights under the 24th Article of War, prior to being sworn. Secure a complete statement. Transmit with the statement a letter signed by a Medical Officer, giving the medical observations to the unit commander. Do not break faith with the patient or attempt force in any manner. Drug addicts spread words among themselves as to where dependable and trustworthy help is available.
3. Follow cases to completion. Unit Commanders, Boards convening under AR 615-368, reviewing authorities, and orders sections must process the case promptly. It is next to impossible for an addict to stop using the drug while in a position to obtain it. Returning a patient to the zone of interior is a step in eliminating him from the Army.

A thorough knowledge of expressions common to drug addicts has been found helpful. Such expressions are "main route" for intravenous; "Skin Pop" for intramuscular; "Get High" or "In the Clouds" when referring to the effects. A knowledge of the local markets, prices, quantity, agents, smoking parties, amount of consumption, and his past military and civilian record are extremely helpful.

Do not expect to secure full information during the first interview. Patience and close observation will yield the opportune moment in most cases. Quite frequently a case refusing to admit its use returns ready to confess once he had attempted to stop and has been unsuccessful.

For further information as to what can be expected from a drug addict making a full statement,

the following is a copy of one recently taken. The soldier's name and certain other information are withheld for obvious reasons.

A-F-F-I-D-A-V-I-T

Personally appeared before me, the undersigned authority for administering oaths in cases of this character, (Soldier's name withheld), who having been duly sworn according to Law, deposes and says as follows:

Desiring to render all possible assistance to the Medical Department in their efforts to restore my health I offer the following information:

1. About nine months ago I arrived in Three months later I started using a narcotic in A "native" male from sold it to me. The drug was a white powdery substance. I started using about six packets a day in my cigarettes.
2. From. . . . I went to on pass. There a soldier friend and I were able to purchase heroin or 'paye' in a house on an off-limits street. We went back several times. Usually we would go there on pass.
3. Almost immediately after I started using narcotics I used all I could get my hands on. Several times I used Benzedrine. Usually I chewed the Benzedrine with gum.
4. I came to in May 1949. I was only here for about one day. I took about twenty some packets of dope back with me to It is cheaper in than Every time someone came back to from the fellows brought quite a bit.
5. I have had two injections. Both were given me by a "native" in The first one made my arm swell up. I was able to rub it down.
6. I have noticed that if you smoke so much you can't get any higher.
7. About two months ago I started having bad dreams. I dreamed that my brother and I were fighting and I shot and killed him. My brother has been dead for about four years. In another dream I thought my face was the hub of a propellor on an airplane. The airplane was headed for telephone or telegraph wires.
8. Night before last I dreamed that all of the hospital nurses had their heads on blocks. Something seemed to cut off their heads. The heads would roll around and laugh for a while. One head wouldn't stop laughing.
9. Now my head hurts all of the time. My stomach pains. My eyesight is poor. My nerves are shot to pieces. I am jittery. Another thing is that I talk to myself. I have lost over ten pounds. I cannot keep food on my stomach. I am always in trouble for something. I cannot bring myself to stop using the drug while in the Orient.

Further deponent sayeth not

(Soldier's name withheld)

Sworn and subscribed to before me this ____ day of _____

XVI. Perforating Palatal Erosion with Massive Hemorrhage Following Tooth Extraction - Capt. J. Frederick Welborn, USAF, (DC), 376th Station Hospital, Japan



Report of a Case

This is the case of a white male, age 19, who was first presented to our clinic on 18 July 1949 for routine examination. The examination was done in the usual manner with explorer and mirror and no pathosis of the oral cavity was observed. Present in the mouth, however, were four clinically erupted third molar teeth, each in marked malposition. X-rays of the four molar areas were obtained and removal of all four third molar teeth advised.

The following morning the patient was hospitalized, fortified with 300,000 units of penicillin in oil and wax, and under local procain anesthesia the maxillary and mandibular third molars on the right side were removed without incident by forceps delivery alone. The patient was then prophylactically placed on crystalline penicillin, 200,000 units twice daily, and two days later the left maxillary and mandibular third molars were removed in the same manner as previously, and without incident. The patient's recovery was uneventful and in two more days he was dismissed with adequate granulation and no sign of early infection in any of the operated areas. The patient's blood and urine studies during his stay in the hospital were within normal limits. Serology findings were negative.

Exactly three weeks from the date of his discharge from the hospital, the patient came to the emergency room in the dispensary about nine o'clock P.M., with the complaint of bleeding from the mouth. Examination revealed an unorganized blood clot on the hard palate approximately 1.5 cm in diameter, and located half way between the tuberosity of the right maxilla and the midline. A small, but constant, show of blood was observed at the peripheral limits of the clot. There was no edema in the palate, upper pharynx, or fossae, and there was no associated pain. The patient reported that there had been a show of blood from the area for three days and that the amount had steadily increased. Oral temperature was 100.8, pulse 98, and respiration 20. The patient complained of malaise and mild occipital headpain.

From the brief history and clinical data obtained, I was impressed that we were confronted with a perforation thrombus of the palate, and because it was necessary to effect diagnosis as quickly as possible, the patient was told to recline upon the examination table, the thought being that by increasing the pressure to the area it could effectively be demonstrated whether or not the source of bleeding was of a capillary nature from a superficial erosion, or of an arterial nature from a through and through erosion. As soon as the patient was in a reclining position, the clot gave way to a massive, projectile type of arterial hemorrhage. Before he could be uprighted, the table linens, his clothing, and my outer garments were completely blood soaked. A handful of 4x8 gauze sponges were placed into the mouth and hard occluding pressure obtained. This completely failed to control bleeding and in a matter of seconds the same projectile type hemorrhage as before was resumed. The end of an ordinary pillow case was stuffed into the mouth, and the operating room was set up for the immediate surgical control of the hemorrhage. The medical officer of the day accompanied the patient to the operating room and upon arrival there, the patient was beginning to show the classical signs of shock. A cross match of the patient's blood was ordered and the administration of morphine sulfate gr 1/6, scopolamine gr 1/150, atropine sulfate gr 1/150, and menadione mgs .50 intramuscularly.

Following the usual method of draping and preparation for surgery in the mouth, and with the patient in the thyroidectomy position on the operating table, the following operation was performed according to these steps: 1. A large, self-retaining oral retractor was inserted; 2. The anterior dorsum of the tongue was infiltrated with procaine and a silk suture was taken, the ends of which were clamped and used for tongue retraction; 3. Approximately 10cc of procaine HCl with epinephrine was injected into the palatine musculature with emphasis on the site of erosion. (Only slight hemostatic effect was obtained); 4. A long palatal incision was made which extended as far posteriorly as the anterior pillar, and anteriorly in a semi-circular fashion across the midline as far as the incisive foramen; 5. The flap thusly obtained was undermined and reflected, and with the aid of continuous suction, the posterior palatine foramen, the anterior palatine nerve, and the eroded descending palatine artery were identified. An area of necrotic bone measuring approximately 2.5 cm in diameter was observed around the foramen; 6. The patent artery was clamped and a transfixure suture was taken with #00 chromic catgut. It was here that I was able to observe that the vessel was anomalously large with a lumen measuring approximately 3-4 mm in diameter; 7. The surrounding tissue and bone were carefully debrided; 8. A mattress of fibrin foam soaked in thrombin was laid into the void; 9. The flap was approximated and closed with #00 silk interrupted sutures; 10. A sheeting of vaseline gauze was adapted over the entire palate and the oral cavity packed tightly with 4.8 dressings. The patient returned to his room on the ward in fair condition. The following orders were given:

- | | |
|--|---|
| 1. TPR q 4 hrs | repeat in six hrs |
| 2. Blood pressure q 15 min for 4 hrs | 8. Ascorbic acid, mgs 100 TID, IM |
| 3. Crystalline penicillin, 50,000 q 3 hrs | 9. Nothing by mouth for 12 hrs |
| 4. Elevate head of bed STAT | 10. Codeine gr I (H) q 4 hrs |
| 5. Immobilize head with sandbags | 11. CGC STAT with daily WBC and urinalysis |
| 6. Menadione .25 mgs BID | 12. Hot oral irrigations q 4 hrs after 48 hrs |
| 7. IV 5% glucose in saline, 1,000 CC STAT, | 13. Hematocrit STAT |

It was not necessary to resort to whole blood transfusion, but intravenous feeding was continued for two days. The patient was maintained on the above regime of therapy and after 48 hours, a hi-vitamin, hi-caloric liquid diet with intermittent nourishment was instituted. The patient went on to a complete and uneventful recovery.

In three weeks the patient was returned to the operating room where a plastic repair of the palate was done in an attempt to close the large void left by the original erosion in the palatine bone. The result was entirely satisfactory.

DISCUSSION

This case dramatically illustrates the nearly fatal consequences which may arise from the more minor oral surgical procedures.

The final impression of the case was that of septic clot formation preceded by surface granulation of an upper right third molar extraction wound. Following the usual course of subperiosteal infiltration, the infectious process advanced from the site of extraction along the planes of least resistance and proceeded to involve the area of the posterior palatine foramen, where a pathological erosion of the descending palatine artery and surrounding bone and tissue occurred.

This case demonstrates the occasional anatomical anomalies found among otherwise normal individuals, for here the descending palatine artery was found to be exaggerated over its usual size. During the time of massive hemorrhage, which was of about 10 minutes duration, it was estimated that the patient lost well over 1,000 cc of blood.

Radiograms taken before the original extractions showed no indication of initial or residual infection in the area. It is therefore interesting to note that the postoperative clot became infected in spite of the preoperative fortification with penicillin and the postoperative course of therapy with the same drug.

It was impossible to obtain culture material of the clot due to the sudden onset of hemorrhage at the time the patient presented.

XVII. The Physiology of Wound Healing and Evisceration - 1st Lt. W. V. Schulte, MC, Tokyo GH



By definition, a wound is the solution of continuity in any portion of the body as the result of action by an external instrument. Wounds may be classified as: (1) Incised wounds; (2) Abrasions; (3) Contusions; (4) Lacerations; (5) Avulsions and (6) Puncture wounds. Wounds may be further classified as: (1) Clean; (2) Contaminated and (3) Infected.

The result of any wound is an immediate inflammatory reaction. The various stages in the process of inflammation are fundamentally the same, regardless of the inciting cause. Various tissues have different characteristics, but there are fundamental principles to which all regenerating tissues adhere.

The object of the inflammatory process is to neutralize and remove all irritant. The chief surgical irritants are pathogenic micro-organisms, physical and chemical irritants and trauma.

There are three main phases of the inflammatory process: the vascular changes, the formation of the inflammatory exudate and the process of repair.

THE VASCULAR CHANGES: The vascular changes of the inflammatory process occur mostly in the capillaries but are also evident in the finest arteries and veins. The small vessels, after a preliminary contraction, undergo marked dilatation so that the part becomes flooded with blood. Although temporarily quickened, the blood flow soon becomes slowed, and the leukocytes, the total number of which may be

increased, accumulate within the vessels.

With slowing of the blood stream, there is a re-arrangement of the blood cells. The leukocytes fall out of the central current and are dragged along the walls, to which here and there they adhere, until finally the vessel wall is lined by these cells. This is brought about by an increased stickiness of the leukocytes due to an alteration in surface tension, this change being in turn caused by bacterial or other toxins which have penetrated the wall of the vessel. The wall itself is meanwhile undergoing a change. The endothelial cells become greatly swollen and project into the lumen, thus assisting the tendency to slowing of the blood flow. In addition, the wall of the vessel appears to become looser in texture so that the outlines of its constituent parts are lost, and it becomes more or less of a protoplasmic sponge. Thus the vessel becomes more permeable, and the contents of the vessel pass from the lumen of the vessel into the surrounding tissue and thus gain access to the irritant.

It is not necessary to describe in detail the well known process of the emigration of the leukocytes, the motive power of which appears to be an alteration of surface tension on the side next to the vessel wall by some diffusible chemical agent.

The nature of this chemical agent has caused a great deal of debate and research among various investigators. It is now fairly well established that a histamine-like substance, called "leukotaxine" by some and the "H-substance" by others is the agent which causes the increased capillary permeability and the dilatation of the vessels. Leukotaxine is thought to be intermediary breakdown product of protein metabolism of the injured cells.

THE INFLAMMATORY EXUDATE: The inflammatory exudate which forms at the seat of irritation is partly cellular, partly fluid in character. The cells are derived from the blood and from the tissues; the fluid comes from the blood. The purpose of the exudate is to neutralize and overcome the irritant, to remove it, and to repair the damage done.

The polymorphonuclear leukocyte is the cell of acute inflammation. They are actively amoeboid and phagocytic, and their function is the destruction of living bacteria by phagocytosis. On disintegration, the leukocytes liberate antibacterial substances, proteolytic ferments and thrombin. The lymphocytes, eosinophils and basophils play little part in acute inflammation or healing. The monocyte is important in the later stages of the inflammation. They act as scavengers, and by their great phagocytic power remove dead leukocytes, bacteria and necrotic and dead tissue cells.

The blood plasma forms an important constituent of the inflammatory exudate. It brings with it antibodies in the form of agglutinins, bacterolysins and apsonins. The plasma is also important in that it brings fibrinogen, which unites with the thrombin which is liberated from the leukocyte, to form fibrin.

Inflammation is in its essence a struggle between two forces representing destruction and conservation. In every case these two processes are present. The end result depends upon which proves the stronger, and upon the degree of destruction produced before repair sets in. To every case there are three possible terminations: 1. resolution; 2. suppuration, with tissue death, and 3. repair.

REPAIR: Repair is sometimes spoken of as a part of inflammation. The two processes are intimately blended. Inflammation and repair have been compared with a fire in which, while the flames are burning in one part of a building (which we may consider the death of tissues caused by the surgeon's knife and trauma plus infection which may be introduced) and fire engines are putting on water (our process of inflammation and the inflammatory exudate) carpenters have already begun to arrive and are busy repairing the burned out areas. This last is our process of repair.

The two processes go on side by side, but they are quite independent. In clean surgical incision the process of inflammation is minimal; it is usually concerned only with the removal of the tissue cells which have been killed by the direct action of the knife, and those cells which die due to trauma, and necrosis due to poor blood supply. In inflammation it is the wandering cells of the blood and tissues which do the work. In repair, it is the fixed cells of the tissues with which we are concerned.

The process of repair may conveniently be studied in two classes of cases; healing of a wound with loss of substance, and healing of an incised wound in which the edges are brought together without loss of substance. Although it is convenient to study the process in the case of the wound, it may be seen in any inflammation which goes on to recovery. Adhesions shutting off an inflamed appendix, the zone of fibrous tissue which wall off a chronic cerebral abscess, the omentum overlying a gastric ulcer, are examples of a general tendency to repair as much as the healing of the wound made by the surgeon's knife.

HEALING OF A WOUND WITH LOSS OF SUBSTANCE: A clean aseptic wound with loss of substance is in the same condition as a healthy or healing ulcer, and the same changes occur in both. The gap in the surface is filled with various elements of the inflammatory exudate, chiefly coagulated plasma, bound together by interlacing strands of fibrin. The capillaries at the sides and base put forth solid buds of endothelium which grow into the mass, unite with one another, and become canalized and filled with blood, thus forming a new network of capillaries. In this way the exudate becomes vascularized, and the fibrin which at first forms a scaffolding for this new formation, becomes absorbed before the new capillary loops.

At the same time the connective tissue cells proliferate and develop processes and are called fibroblasts. The fibroblasts support the capillaries and permeate the fibrin, forming an interlacing network throughout it. Owing to the prolific growth of the new vascular tissue the floor of the gap becomes covered with little translucent, rosy, nodular masses or granulations which rapidly fill in the gap, give the floor a velvety appearance, and bleed readily on account of their great vascularity. This new formation is called granulation tissue.

The fibroblasts lay down fine, connective tissue fibers between the cells. These fibers increase in number and thickness until definite fibrous tissue can be recognized, and the originally cellular granulation tissue becomes gradually fibrosed. The fibroblasts are compressed between the bundles or new fibers, until they appear only as thin connective tissue cells consisting of little more than an elongated nucleus. The capillaries become obliterated, so that the vascular granulation tissue finally becomes a fibrous non-vascular mass of scar tissue.

The epithelium at the edge of the wound or ulcer soon shows signs of proliferation, and a thin bluish white line appears which spreads inwards covering the surface with a layer of young epithelial cells.

HEALING OF A CLEAN INCISED WOUND WITH NO LOSS OF TISSUE: Here there is no granulating surface, and the young vascular connective tissue forms the principal feature. Into the slit-like gap made by the knife, blood plasma and whole blood are poured, which on clotting furnish the fibrin network which forms the scaffolding for the repair. The capillary loops and fibroblasts first use, and then replace the scaffold, the capillaries absorbing any debris to be removed, and the fibroblasts sewing together the opposing surfaces.

The time required for complete repair will depend upon a number of factors, of which the amount of tissue destruction and the degree of asepsis are the most important. The presence of bacteria may retard and may completely prevent the process. It is evident that it is impossible to give an estimate of the time required for a wound with loss of substance to heal, but the following table will give an indication of the approximate times of the various states of the healing process in the case of an incised wound.

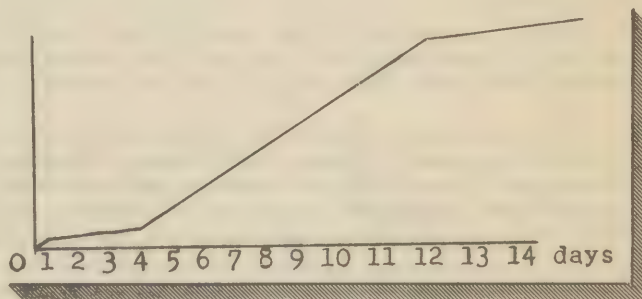
HEALING OF AN INCISED WOUND:

End of 12 hours.....	Vascular and connective tissue reaction begins
End of 2nd day.....	Granulation tissue appears
End of 4th day.....	Temporary clot replaced by granulation tissue
End of 5th day.....	Epithelium covers narrow wound; definite fibrils appear
End of 3 weeks.....	Dense non-vascular scar tissue is formed

The above is an outline of what takes place in the normal healing process when optimum conditions are present. Healing is divided into three phases. The first three to five days is called the lag period - it is the period of inflammation and granulation formation. The appearance of fibroblastic processes or the 4th to 5th day is the period of fibroplasia, and is marked by a rapid increase in the tensile strength of the wound. This period of fibroplasia lasts until the 12th or 13th day, when the majority of the fibroblastic changes have taken place. From the 13th day on is called the contracture phase. During this phase the scar contracts and the rate of increase of tensile strength is greatly diminished - though it continues for 2 or 3 months. The tensile strength of a wound may be demonstrated by the adjacent graph. The rate of healing depends upon a number of factors; among these are:

1. Presence of infection - the lag period is increased, fibroplasia is slowed. Disruption of an abdominal operative wound may occur.

2. Age and nutrition of patient - Wounds in the young heal faster; in poorly nourished individuals healing is much slower, often incomplete, dis-



ruption much more frequent.

3. Vitamin deficiencies - especially K and C. In vitamin K deficiency control of bleeding may be difficult. May cause hemorrhage into wound with resultant hematoma formation creating pressure necrosis of surrounding tissues and delaying healing. Vitamin C is necessary for production of Collagen. It has been repeatedly demonstrated that wounds in Vitamin C deficient patients heal more slowly. The lag period is prolonged, the period of fibroplasia is delayed, and slowed. The tensile strength curve rises slowly, and eviscerations are much more common in vitamin C deficient individuals. The normal plasma vitamin C level is .8 to 1.8 mgm %. It is recommended that vitamin C be given preoperatively, in amounts 600 to 1000 mgm daily to deficient individuals and the intake should be continued during the period of healing.

4. Blood supply to wounds has great importance on the process of repair. Areas of good blood supply, such as the face, heal rapidly. In making operative incisions, care must be taken to preserve as much blood supply as possible. Poor hemostasis results in large clots and hematomas in the wound which delay healing. Care must be taken in tying bleeders that too much tissue not be included in the tie, as all this tissue must be removed by phagocytes, and consequently the lag period can be increased. Too much pressure from dressings, splints, etc., also might embarrass the blood supply, and hence retard healing.

5. Protein deficiencies also are important in wound healing. Lund states that in hypoproteinemic patients, 15% reduction in plasma proteins may lead to delayed healing, and that a 25% reduction is serious enough to cause serious delay or a complete failure in healing. Kragbill at the University of Nebraska, had seven cases of evisceration in five years. In six of these seven patients, there was a definite hypoproteinemia, and in all seven there was a complete absence of plasma vitamin C.

6. It is important from the standpoint of healing that the electrolyte balance be maintained. A state of mild acidosis favors healing, whereby alkalosis delays the healing rate.

7. Proper immobilization of the wound itself is necessary for good healing. If stresses and strains are put on the wound, it is obvious that the fine network of fibrin can easily be broken, as later in healing the young connective tissue fibers can be torn by great strains and pressures.

The type of suture material employed has some bearing on the rate of healing and on the tensile strength of a wound. A group in New York headed by Localio did a great deal of work on this subject several years ago. They compared the healing of wounds in experimental animals sutured with catgut, silk, nylon, cotton, and wire. The following statements are some of their conclusions. The lag period was longest for catgut and cotton, being 4 days; for silk and wire sutured wounds it was 3 days, and for nylon it was 2 days. The mean tensile strength of wounds sutured with catgut was significantly less than that of wounds sutured with any of the non-absorbable suture materials. The use of catgut resulted in a greater number of wound disruptions. Non-absorbable suture material resulted in the tensile strength of the wound reaching normal limits faster than did catgut. They state that they found no appreciable differences in the group of non-absorbable suture materials with reference to the points considered. This same group also demonstrated that the incidence of wound infection is much greater when catgut suture material is used than when a non-absorbable suture material is employed.

WOUND DISRUPTION: The term disruption as employed here will refer to those cases in which any portion of the peritoneal cavity or its contents presented in the wound. Among the words used as synonyms for this condition by various authors are: dehiscence, rupture, eventration, evisceration, avulsion, and separation.

In abdominal laparotomies the incidence of disruption is reported as .5 to 1%. The greatest incidence is the period of late middle and old age, 40 to 70 years. There is no difference between the sexes in incidence. It is thought to be most common when laparotomy is performed in the presence of pernicious anemia, cholecystic disease, peptic ulcer, carcinoma, tuberculosis, and syphilis. In a series of 55 cases of disruption occurring in 8,346 laparotomies at the Cincinnati General Hospital in the 10-year period 1933-1942, 79% occurred in the presence of one of the above group of disease.

The etiology of wound disruption is disputed by various authorities. The following have all been offered as causes. Protein deficiency, Vitamin C deficiency, strains and increased intra-abdominal pressure. Tahey believes seroma and hematomas are the chief cause. Freeman's concept is that imperfect and incomplete closure of the peritoneum resulted in the incarceration of omentum or bowel. With resultant edema and exudate, the incarcerated tissues acted as a progressively enlarging wedge

Decreased suture strength and improper suturing also have been offered as causes. Infection has

often been mentioned. No conclusive evidence has been presented by any authors.

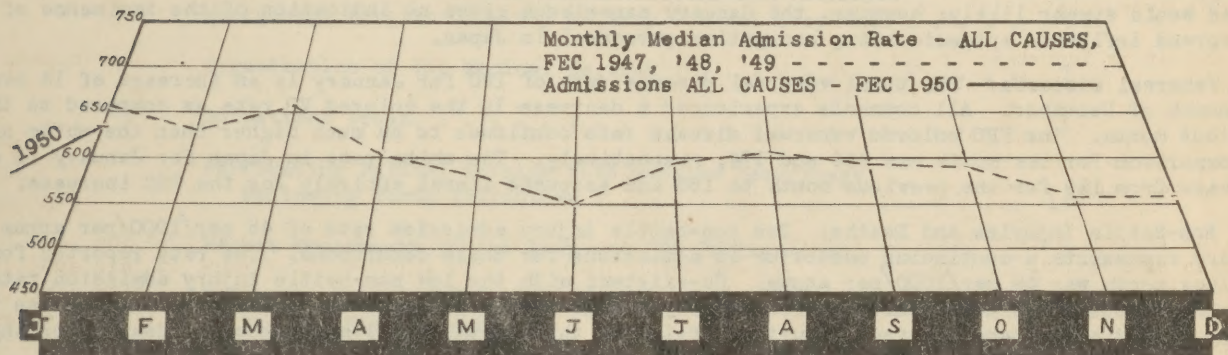
The most common organs presenting in evisceration are omentum, and large and small bowel. Hemorrhage is rarely present when disruption occurs. Disruption is most frequent from the 5th to the 9th day. The treatment is secondary closure with through and through wire sutures, preferably under local anesthesia. If the patient's condition is too poor for closure, adhesive tape strapping with or without packing may be employed.

Most common complications are intestinal obstruction, peritonitis and herniation. Mortality is reported at 30 - 50%.

This paper has presented briefly general descriptions of inflammation and repair. It has attempted to show some factors which have a bearing on tissue repair and has discussed briefly factors influencing the failure of abdominal wounds to heal.

PART III - STATISTICAL

HEALTH OF THE COMMAND



Admission rates per 1000 troops per annum for the four-week period ending 27 January 1950 were as follows:

	FEC	JAPAN	MARBO	PHILCOM	PYCOM
All Causes	638	712	234	331	503
Diseases	594	664	196	297	467
Injuries	45	47	38	34	36
Psychiatric	7.4	8.1	0	8.1	6.6
Common Respiratory Diseases and Flu	91	114	1.4	32	21
Primary Atypical Pneumonia	4.7	5.7	0	0	2.6
Common Diarrhea	3.0	2.7	2.7	2.0	5.3
Bacillary Dysentery	.17	.22	0	0	0
Amebic Dysentery	.34	0	0	2.0	2.0
Malaria, new	.26	.22	0	0	.66
Infectious Hepatitis	3.8	3.8	1.4	8.1	3.3
Mycotic Dermatoses	1.6	1.8	0	2.0	1.3
Rheumatic Fever	.43	.45	0	2.0	0
Venereal Diseases	180	191	40	97	215

The admission of 7459 patients for the four-week period ending 27 January gave an all-causes admission rate of 638 per thousand per annum. This represents a definite increase over the previous month

which had a rate of 531, but is not considered excessive and compares favorably with the same periods during 1948 and 1949, at which time the rates were 651 and 653, respectively. Of reportable conditions, Japan's increased common respiratory disease and venereal disease rates were the principal contributors to the increased all causes rate.

Although the average daily non-effective rate for January showed a slight increase from 16 in December to 17, it is considered very good when compared with previous monthly rates both for the FEC and the total Army.

Common Respiratory Diseases and Influenza: Reported admission rates for common respiratory diseases and influenza for the FEC increased from 58 in December 1949 to 91 per/1000/per annum for January 1950. Most of the reported total incidence as well as the increment of increase was due to the occurrence of these infections among military personnel in Japan. Both MARBO and RYCOM showed a decrease and the increase in PHILCOM (AF) is considered not to be significant.

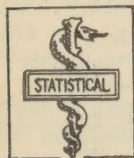
During the month, approximately 80 paired serum specimens were submitted for the seriological diagnosis of influenza. Of this group, 16 were found to be positive (that is, presented a four-fold or greater increase in antibody titer) for influenza type B. These findings are considered to establish the presence of influenza type B in the area. In this connection, it is of interest to note that most of the reported common respiratory diseases and essentially all of the cases in which a positive diagnosis of influenza was made occurred among troops in the Tokyo-Yokohama area; those stationed elsewhere in Japan showing very little change in their respiratory disease admission rates from those reported the previous month. Also, the fact that practically all of the serum specimens submitted for influenza study were from the Tokyo-Yokohama area suggests that influenza-like disease was encountered rarely, if at all, in the other sections of Japan. With the presence of influenza established, its spread would appear likely; however, the January experience gives no indication of the imminence of a widespread influenza epidemic among occupation personnel in Japan.

Venereal Diseases: The total venereal disease rate of 180 for January is an increase of 18 over the month of December. All commands experienced a decrease in the colored VD rate as compared to the previous month. The FEC colored venereal disease rate continues to be much higher than the white and in comparison for the month was 240 and 174, respectively. The white rate in Japan for January is an increase from 159 for the previous month to 186 and accounts almost entirely for the FEC increase.

Non-Battle Injuries and Deaths: The non-battle injury admission rate of 45 per/1000/per annum for January represents a continuing reduction in admissions for these conditions. The rate reported for the previous month was 49 per/1000/per annum. Co-existent with the low non-battle injury admission rate is the conspicuously low death incident for January. Nine deaths occurred in January, of which three resulted from diseases and six from injuries. Prior to this month, the least number of deaths for any month occurred in November 1949, at which time 17 were reported.

Evacuation:

Tabulated below are the number of patients evacuated from the major commands to the ZI during the 4-report weeks in January and the number of patients awaiting evacuation as of 27 January 1950:



	BY AIR	BY WATER	TOTAL	PNTS AWAIT EVAC
JAPAN	183	12	195	152
MARBO	19	0	19	2
PHILCOM	20	0	20	15
RYCOM	63	7	70	19
FEC	285	19	304	188

Evacuations of military personnel per 1000 strength for the period of 31 December to 27 January were as follows: JAPAN - 1.6; MARBO - 1.6; PHILCOM - 2.0; RYCOM - 2.3; FEC - 1.7.

Hospitalization: The bed status as of 27 January 1950 was as follows:

	Total T/O Beds Auth.	Total T/O Beds Establ.	Total T/O Beds Occupd.	% Auth. T/O Beds Occupd.	% of Establ. Beds Occupd.
JAPAN	4,600	4,228	1,878	41	44
MARBO	200	200	92	46	46
PHILCOM	1,250	1,250	556	44	44
RYCOM	750	443	240	32	54
FEC	6,800	6,121	2,766	41	45

IN THIS ISSUE

	<u>PAGE</u>
Army Acts to Meet Summer Medical Shortage	2
Army's Health in 1949 Better Than Ever Before	8
Army Veterinarians Preparing New Inspection Guides.	3
Consolidated Medical Journal.	5
Deputy Surgeon General and Party Visit Far East Command	1
Disposition of Register of Dental Patients (Form 8-116)	8
Management Program Underway at Army General Hospitals	4
Organization of the Medical Section	1
Outpatient Index.	1
Perforating Palatal Erosion with Massive Hemorrhage Following Tooth Extraction	14
Recent Department of the Army and FEC Publications.	9
Refresher Course for Reserve Nurses in Army Hospitals in the Far East Command	5
Short Tours of Active Duty for Medical Department Officers	9
Social Problems at Kobe Base Affecting the Medical Department	11
Statistical	19
The Physiology of Wound Healing and Evisceration.	15
Two Simple Liver Function Tests	10
Warrant Officers' Medical Course.	3



The Chief Surgeon extends an invitation to all personnel of the Medical Department to prepare and forward, with view to publication, articles of professional or administrative nature. It is assumed that editorial privilege is granted. Copy should be forwarded so as to reach the Medical Section, GHQ, FEC, not later than the 10th of the month preceding the issue in which publishing is desired.

Capt. Vincent I. Hack, Editor